Small Business Innovation Research/Small Business Tech Transfer

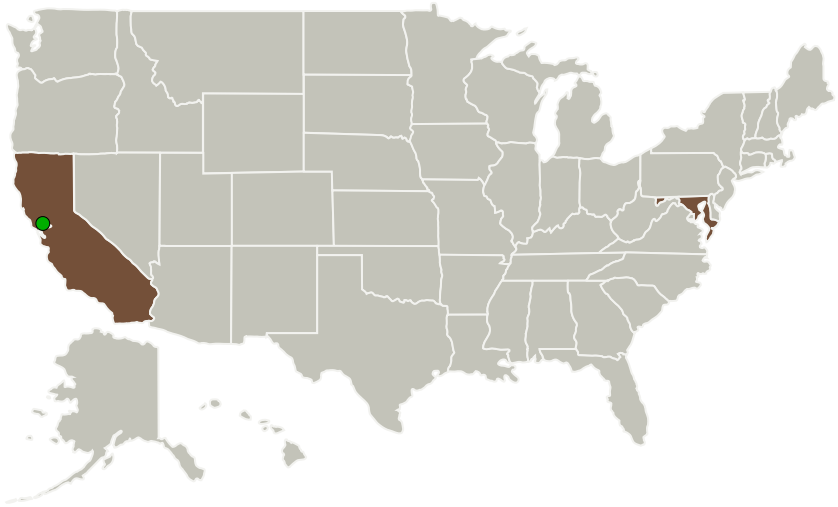
Cloud-Based Analytics, Store and Query System (CASQUE) for Data-Intensive Scientific Processing, Phase I

Completed Technology Project (2013 - 2013)

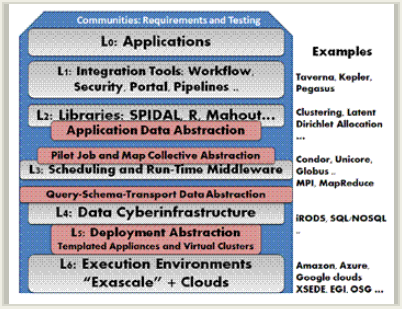
Project Introduction

While it has become apparent that we can and will collect data at unprecedented rates thanks to a wide range of high-resolution high-throughput sensors, it has also become apparent that we do not have the algorithms and tools to satisfactorily analyze Big Data. Cloud computing as an infrastructure (e.g., Amazon Web Services), as a platform (e.g., Google Apps), and as a software ecosystem (e.g., Hadoop/MapReduce and NoSQL tools) offers a promising compute-and-store environment (complementary to supercomputing) to handle the massive amount of data created by NASA missions. In this proposal, we will develop a Cloud-based open architecture Analytics, Store and QUEry (CASQUE) system for data-intensive scientific computing for NASA missions. The architecture and workflow will be tailored for specific NASA missions and will be thoroughly tested in large-scale relevant cloud environments.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Intelligent Automation, Inc.	Lead Organization	Industry	Rockville, Maryland
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California



Cloud-Based Analytics, Store and Query System (CASQUE) for Data-Intensive Scientific Processing

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Primary U.S. Work Locations	
California	Maryland

Project Transitions

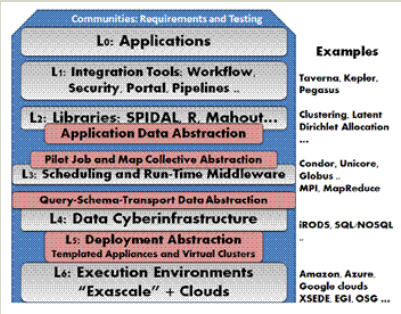
May 2013: Project Start

November 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/138036)*

Images



Project Image
Cloud-Based Analytics, Store and Query System (CASQUE) for Data-Intensive Scientific Processing *(https://techport.nasa.gov/image/135693)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Intelligent Automation, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

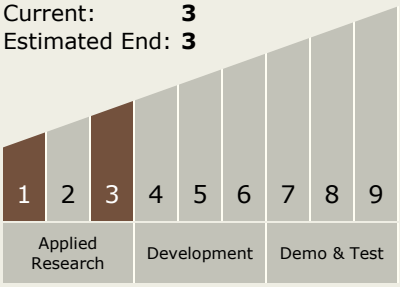
Carlos Torrez

Principal Investigator:

Onur Savas

Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.6 Ground Computing
    - TX11.6.8 Cloud Computing

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System